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An account of the first living coelacanth known to scientists from Indonesian waters

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Synopsis

A brief narrative is presented of the events surrounding the initial discovery of a coelacanth in an Indonesian fish market in Manado, Sulawesi, on 18 September 1997. Although the specimen was not purchased and preserved, photographs were taken and enough information gathered about the fish to warrant an official entry in the Coelacanth Conservation Council (CCC) inventory of known specimens of the living coelacanth *Latimeria chalumnae*. All known information about this first Indonesian specimen is summarized in the official CCC inventory format, and the specimen is herein numbered CCC no. 174.

Introduction

As first reported in Erdmann et al. (1998), the initial discovery of a coelacanth specimen in a North Sulawesi, Indonesia fish market on 18 September 1997, and the subsequent capture and preservation of a second specimen from the same area on 30 July 1998 strongly suggest the existence of a Sulawesi population of living coelacanths. A preliminary morphological examination of the second specimen indicates that this population is likely of the same species as the well-known Comoran population of coelacanths, *Latimeria chalumnae* Smith, 1939. Ongoing genetic analyses should help confirm if this is indeed the case.

Since the initial announcement of the Indonesian coelacanths, the story of the events surrounding the discovery has been rewritten and retold in numerous television and radio programs and newspapers and magazines the world over. Unfortunately, the overwhelming majority of these accounts have contained substantial factual errors. It is the intention of this account to accurately record the sequence of events on 18 September 1997 and the days immediately following the initial sighting, as well as to document specific details of the first reported Indonesian specimen.

While the personal narrative which follows is perhaps atypical for scientific papers, the continuing saga of the living coelacanth has always been one in which the human details are intimately intertwined. It is also interesting to note that the events in this sixty-year saga have been continuously revised in subsequent accounts by various authors. Marjorie Courtenay-Latimer, the discoverer of the first coelacanth trawled off South Africa in 1938, waited fifty years to publish her own account of the find (Courtenay-Latimer 1989) and thereby lay to rest all of the previous stories, many of which differed significantly from her own. It is the goal of this account to promptly establish the proper chronology of events of this discovery.

The first Indonesian coelacanth

On the morning of 18 September 1997, the author and his newlywed wife, Arnaz, escorted their friends John

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Environmental Biology of Fishes

CONTENTS Vol. 54, No. 4 1999

(April)

Invited editorial

The role of learning in the aggressive and reproductive behavior of blue gouramis, *Trichogaster trichopterus*, by K.L. Hollis 355–369

Full papers

Distribution patterns of indigenous freshwater fishes in the Tagus River basin, Spain, by J.A. Carmona, I. Doadrio, A.L. Márquez, R. Real, B. Hugueny & J.M. Vargas 371–387

Fishes of floodplain habitats of the Fly River system, Papua New Guinea, and changes associated with El Niño droughts and algal blooms, by S. Swales, A.W. Storey, I.D. Roderick & B.S. Figa 389–404

Gill morphometry in growth hormone transgenic Atlantic salmon, by E.D. Stevens & A. Sutterlin 405–411

Effects of body size and food ration on over-winter survival and growth of age-0 Atlantic cod, *Gadus morhua*, by V. Gotceitas, D.A. Methven, S. Fraser & J.A. Brown 413–420

Husbandry of the annual killifish *Austrofundulus limnaeus* with special emphasis on the collection and rearing of embryos, by J.E. Podrabsky 421–431

Brief communication

Feeding and growth response of roach, *Rutilus rutilus*, to alarm substance by A. Jachner & T. Janecki 433–437

Rapid communications

An account of the first living coelacanth known to scientists from Indonesian waters, by M.V. Erdmann 439–443

The second recorded living coelacanth from north Sulawesi, by M.V. Erdmann, R.L. Caldwell, S.L. Jewett & A. Tjakrawidjaja 445–451

Are the Indonesian and western Indian Ocean coelacanths conspecific: a prediciton, by V.G. Springer 453–456

Coelacanth Conservation Council Newsletter no. 6 457–470

Authors' index 471

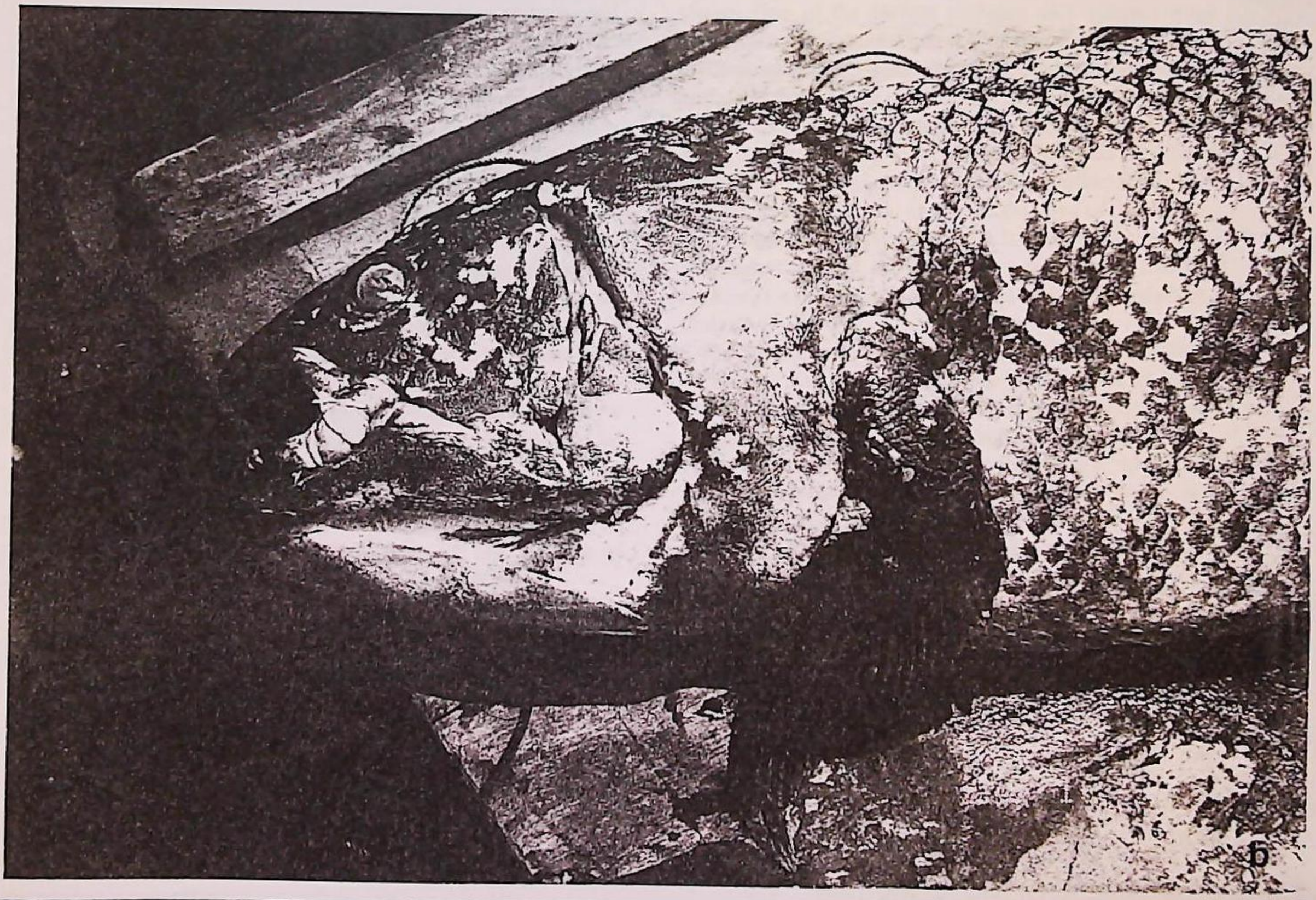
Acknowledgements for refereeing 472

Volume contents 473–475

Instructions to authors 476–477

Announcement 478

a



b

and Janel Intihar to the Pasar Bersehati fish market in Manado, North Sulawesi. John and Janel, who had recently attended our wedding in Bali and subsequent honeymoon cruise around the islands of Komodo, had extended their stay in Indonesia in order to accompany us to north Sulawesi, where I was preparing to begin a two-year postdoctoral research project in coral reef ecology. On the last day of their stay, we suggested a tour of the local fish and produce market, one of our favorite activities whenever we visit a new Indonesian city.

As we stepped out of the taxi at the market, Arnaz's attention was immediately drawn to a large fish on a cart being wheeled across the parking lot by an elderly gentlemen. She called the three of us over, puzzled by the identity of this fish. I immediately recognized it as a coelacanth, having read the story of 'Old Fourlegs' with fascination as a schoolchild. Although I was aware that as of my school days, the coelacanth had not been reported outside of the western Indian Ocean, I had not followed the literature since that time and felt that our 'discovery' was a bit too fortuitous to be real. I simply couldn't believe that we were viewing something which was unknown to science, having just stepped out of a taxi at a bustling market in a relatively large city. Surely the coelacanth must have been previously reported from Indonesia?

Nonetheless, I borrowed Janel's camera and snapped three photographs of the fish (Figures 1a,b), and Arnaz began asking the old fisherman questions about its capture. He had broken Indonesian (his native tongue was the Siau language), and seemed relatively uncomfortable talking about the fish. By this time a crowd was gathering around us, and many offered the advice that this was a grouper. When we asked the old man where he had caught the fish, he simply replied 'dasar laut' (meaning 'sea floor'). Upon further questioning, he explained that the fish was caught at night in approximately 100–200 m depth. When asked where the fish was caught, he turned and pointed out to sea in the general direction of the islands outside of Manado Bay. We then asked if he caught many of these fish, and he replied 'jarang' (infrequently), but then added that he had caught several over his lifetime.

By this point the fisherman was clearly becoming uncomfortable with all of the attention bestowed upon him, and was eager to push his fish cart out of the hot sun. I agonized over whether to try to buy the fish, but wavered and eventually decided against it. Surely this was not a big discovery, and besides, where would we keep such a large specimen while staying in a small hotel? I further reasoned that since we would be working in this area for the next two years, there would be plenty of opportunity to collect another specimen should this later prove to be an important find. I was to regret that decision for almost a year.

Shortly thereafter, we returned to the U.S. for a short visit, both to resupply and to attend John and Janel Intihar's wedding. During the long airplane ride home from Indonesia, I had mused at length about our possible course of action should the Indonesian coelacanth prove to be new to science. Immediately upon arrival in Berkeley, I approached my colleague and former Ph.D. advisor, Roy Caldwell, to ask him if he knew of coelacanths reported from outside of the Comoros. He replied that he did not know of any such reports, and a quick glance through his library convinced us that this was indeed an exciting discovery. We agreed that we would pursue this discovery further upon my return from John and Janel's wedding.

In the meantime, John and Janel had returned to the U.S. as well, and had constructed a world wide web site featuring pictures from our wedding and honeymoon cruise. One of the picture collages they created was devoted to photographs taken in Manado, and included all three of the coelacanth pictures. John sent an e-mail announcement about the website to all of the wedding guests, including Roy, shortly after we arrived in the states and had told Roy of the find. Roy had browsed the web site, and excitedly told several other Berkeley professors of the coelacanth pictures. One of these professors was George Barlow, who immediately realized the importance of the find and e-mailed his former student, David Noakes at the University of Guelph in Ontario.

David hurriedly contacted Roy to inform him that while this was a very important find, it was imperative that this not be made public until properly documented and especially until preventative measures were taken to protect the Indonesian population of coelacanths. Both he and Eugene Balon, the Guelph coelacanth specialist, were very concerned that the website publicity would spread quickly and that soon thereafter

Figures 1a,b. The first known Indonesian coelacanth, discovered at the Pasar Bersehati fish market in Manado, north Sulawesi on 18 September 1997. The specimen was later sold.

collectors would be combing Manado for further specimens, dead or alive. David and Roy managed to contact me enroute to John's wedding, and we were also able to speak with John and had him remove the photographs from the website, all within hours of Roy's initial viewing!

Shortly after the Intihar's wedding, I returned to north Sulawesi to begin the search for a second specimen. Roy and I obtained additional funding from the National Geographic Society to support fishermen interviews throughout north Sulawesi, and the search began in earnest. After five months of visiting fishing villages around the province, I eventually located the elderly fisherman who had been wheeling the first specimen across the market on that fateful day. Only then did we learn that it was actually his son, Om Maxon Haniko, who had captured the specimen in a deeply-set shark gillnet off of the volcanic island of Manado Tua. We subsequently identified a second shark net fisherman from the same island, Om Lameh Sonatham, who had also captured coelacanths in the past. Four months later, Om Lameh brought to us the second specimen, and this time the fish did not get away. Details of the second specimen are presented in the next rapid communication (Erdmann et al. 1999).

CCC entry

All relevant data known about the first Sulawesi specimen are summarized below. This data entry follows the structure of the official Coelacanth Conservation Council (CCC) inventory of all known specimens of the coelacanth *Latimeria chalumnae* (Bruton & Coutouvidis 1991).

(1) *CCC no. 174.*
(2) *Date and time of capture*: 18 September 1997, before dawn. The gillnet in which the specimen was captured was set at 18:00 h on the previous day, and pulled from the water at 6:30 h on 18 September. The sea was calm during this time, and the lunar phase was two days past the full moon.
(3) *Site of capture*: Directly offshore from the village of Kampung Negeri, Manado Tua island. Latitude/longitude: 1°37′N, 124°43′E.
(4) *Name of fisherman*: Om Maxon Haniko, 36 years of age, was the head of the shark net crew which captured the fish.
(5) *Distance from shore at capture*: Approximately 200–300 m from shore. The shallow (1–3 m) reef flat here is approximately 150 m wide, ending in an abrupt dropoff to 40 m depth, followed by a steep slope to well over 200 m. The shark net is anchored at the edge of the dropoff with a long rope, and the net itself extends up to 150 m from the dropoff.
(6) *Depth of capture*: Approximately 100–200 m. As the net itself is 150 m long, and extends downwards along the reef slope, it is difficult to make an approximation of the depth of capture.
(7) *Bait used*: No bait was used. As mentioned above, this specimen was captured with a deep-set shark gillnet. Dimensions of the net are as follows: 150 m in length, 11 m in height, mesh size of 6 cm square (unstretched). The net is anchored to the top of the reef flat by a 200 m long thick rope, and the net is set 3.5 m above the substrate, using buoys along the top of the net and heavy stones on the end of 3.5 m long ropes attached to the bottom of the net. The net is set in the late afternoon (17:00–18:00 h), left in place overnight, and hauled in at dawn the next morning.
(8) *Weight*: The specimen weighed approximately 30 kg.
(9) *Length*: Approximately 1.3 m TL.
(10) *Sex*: Undetermined.
(11) *Condition on capture*: This fish was still alive when the net was hauled in, and reportedly remained alive for several hours after landing.
(12) *Method of preservation*: As described above, this specimen was unfortunately not purchased and preserved. It was later purchased by an unknown citizen of Manado for 30 000 Indonesian rupiah (approximately US$ 12.00 at the time).
(13) *Condition of preserved specimen*: Not applicable.
(14) *First literature reference*: Erdmann et al. (1998).
(15) *Current holding*: Not applicable.
(16) *Additional comments:* While it is certainly unfortunate that this first Sulawesi specimen was not preserved for science, this does not diminish the excitement and importance of this find. The fact that living coelacanths could escape detection from the scientific community in an area well-studied by ichthyologists for over 100 years is wonderful; it is a humbling and exciting reminder that humans have by no means conquered the oceans, and provides hope that 'Old Fourlegs' is more abundant and resilient than we initially dared hope.

Acknowledgements

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